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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,880	11/28/2001	Thomas A. Koes	50884	1611
21874	7590	08/18/2004	EXAMINER	
EDWARDS & ANGELL, LLP			LEE, SIN J	
P.O. BOX 55874				
BOSTON, MA 02205			ART UNIT	PAPER NUMBER

1752

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/995,880	<b>Applicant(s)</b> KOES, THOMAS A.	
	<b>Examiner</b> Sin J. Lee	<b>Art Unit</b> 1752	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2004.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-20 is/are rejected.  
 7) ☐ Claim(s) 5, 19 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. In view of the amendment filed on March 5, 2004, previous objection on claims 4, 5, 15, 16, 20 and previous rejection on claims 8 and 9 (as addressed in Paragraphs 1-5 of the last Office action mailed on September 3, 2003) are hereby withdrawn.

***Claim Objections***

2. Claim 5 is objected to because of the following informalities: On line 5, applicants need to delete "phthalic acid, benzene tricarboxylic acid," (those two acids are already listed on line 4). Appropriate correction is required.
3. Claim 19 is objected to because of the following informalities: On line 3, applicants need to delete "arylcarboxylic acids" (because this term is already present on line 2). Appropriate correction is required.
4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 1, 12, and 18, applicants recite, "wherein the organic acid . . . is present in an amount of 0.125 wt % or greater, based on the total dry weight of the polymeric binder." Although there is support in the present specification for the amount of the organic acid being 0.125 wt% or greater *upto 10 wt%*, there is no support for the amount of the organic acid being 0.125 wt% or greater (with no upper limit).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barr et al (6,004,725).

In Example (see the table in col.5 and col.1, lines 8-11), Barr teaches a negative acting photoimageable composition useful for manufacturing printed circuit boards, comprising 12.49 wt% of Binder A' having an acid number of 239, 38.89 wt% of Binder A'' having an acid number of 149, 9-phenyl acridine (present photoactive component of claim 7), and 0.06 wt% of o-phthalic acid (which chemical formula is  $C_6H_4-1,2-(CO_2H)_2$ , which is the present organic acid of claims 5 and 16, present arylcarboxylic acid of claims 3, 14, and 19, and present aryldicarboxylic acid of claims 4, 15, and 20).

Since Barr uses 0.06 wt% of o-phthalic acid together with 12.49 wt% of Binder A' and 38.89 wt% of Binder A'', this gives 0.117 wt% of o-phthalic acid based on the total dry weight of the Binders A' and A'' (i.e.,  $(0.06 / (12.49+38.89)) \times 100 = 0.117$  wt%). Since 0.117 wt% (which is about 0.12 wt%) is very close to the lower end of the present range of 0.125 wt% (which is about 0.12 wt%) or greater, the prior art's teaching would render present range *prima facie* obvious. Where the claimed ranges and prior art do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, a *prima facie* case of obviousness would exist which may be overcome by a showing of unexpected results, In re Titanium Metals Corporation of America v. Banner, 227 USPQ 773 (Fed. Cir. 1985). Therefore, Barr's teaching would render obvious present inventions of claims 1-17 (since Barr teaches present organic acid of claims 5 and 16, it is the Examiner's position that Barr's phthalic acid would inherently be non-polymerizable with the binder as presently recited in claims 1 and 12.

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Also, since Barr teaches present photoresist composition including present organic acid, it is the Examiner's position that Barr's composition including the phthalic acid would enhance the removal of the composition from the substrate as presently recited in claim 12. Also, since Barr's binders have the acid numbers of 239 and 149, and since these acid numbers fall within the present range of 50-250 in claim 9, Barr's binders would inherently comprise sufficient acid functionality to render Barr's composition developable in alkaline aqueous solution as presently recited in claim 8).

With respect to present claims 18-20, after Barr's composition is coated onto a polyester film and dried, the coated mixture is then laminated onto a clad copper composite (present printed wiring board substrate). The laminated material is then exposed and then developed. See col.5, lines 47-65. Therefore, Barr's teaching would render obvious present inventions of claims 18-20.

### ***Response to Arguments***

9. Applicant's arguments filed on March 5, 2004 have been fully considered but they are not persuasive. Applicants argue that the newly added limitation as to the amount of the organic acid (0.125 wt% or greater based on the total dry weight of the polymeric binder) is explicitly outside the range disclosed by Barr because in his Example Barr uses 0.06 wt% of the phthalic acid. However, as addressed above in Paragraph 8, since Barr uses 0.06 wt% of o-phthalic acid together with 12.49 wt% of Binder A' and 38.89 wt% of Binder A'', this gives 0.117 wt% of o-phthalic acid *based on the total dry weight of the Binders A' and A''*. Since 0.117 wt% (which is about 0.12 wt%) is very close to the lower end of the present range of 0.125 wt% (which is about 0.12 wt%) or

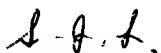
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greater, the prior art's teaching would render present range *prima facie* obvious. See In re Titanium Metals Corporation of America v. Banner, *supra*. Therefore, although Barr does not anticipate present inventions of claims 1-20 anymore, Barr's teaching renders obvious present inventions of claims 1-20.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

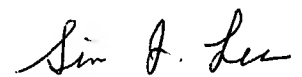
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee  
August 13, 2004

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